GENERAL INFORMATION REQUIREMENTS

Paragraph 2.983(a)

Name of Applicant: Samson Technologies

Address of Applicant: 575 Underhill Blvd.
Syosset, NY 11791

Name of Manufacturer: Samson Technologies

Paragraph 2.983(b)

Equipment
Identification: **FCC ID: CCRAF1M**

Paragraph 2.02(c)(1)

Necessary Bandwidth Determination:

The necessary bandwidth was calculated utilizing the following formula:

$B_n = 2M + 2D$ M = 15 kHz
D = 32.8 kHz

$B_n = 2(15) + 2(32.8) = 95.6$ kHz

Paragraph 2.1046

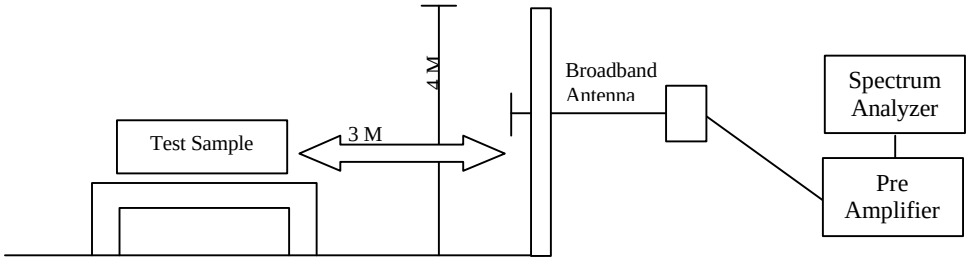
Power Output, Effective Radiated Power

POWER OUTPUT, EFFECTIVE RADIATED POWER (Para. 2.1046)

A. Measurement Procedure:

The transmitter under test was placed on an 80 cm. high non metallic table on the Open Air Test Site with its antenna polarized vertically. A receive dipole antenna was placed three meters away from the transmitter. The turntable was rotated 360 degrees and the receive antenna was raised and lowered from 1 to 4 meters until a maximum reading was obtained. This reading was recorded. The transmitter under test was replaced with a dipole and signal generator. The signal generator was set to the frequency of the transmitter under test. The level of the signal generator was increased until the level was equal to that previously measured. The required input level from the signal generator in dBm was recorded and converted into milliwatts. This was the Effective Radiated Power of the transmitter.

Setup of the test is shown below:



B. Test Results:

The results for the above test are submitted as a separate attachment named ERP.pdf.

Paragraph 2.1047

Modulation Characteristics

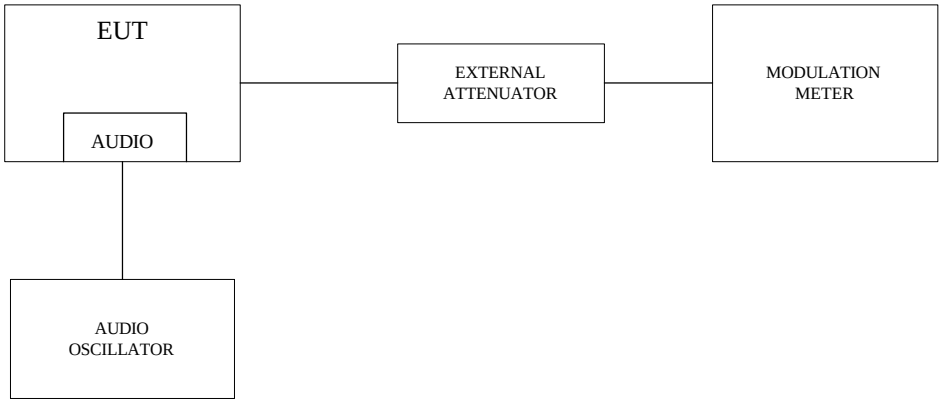
MODULATION CHARACTERISTICS (2.1047)

A. Measurement Procedure:

An Audio Oscillator was directly coupled to the audio input of the transmitter under test. The RF Output at the antenna terminals was loosely coupled to a modulation meter as shown below.

The audio level applied to the input was adjusted from –50dBm to +10dBm at each frequency listed herein. At each test frequency and level, the FM modulation was recorded.

Setup of the above test is shown below:



B. Test Results:

The test data for this method are being submitted as a separate attachment, named modchar.pdf.

Paragraph 2.1049

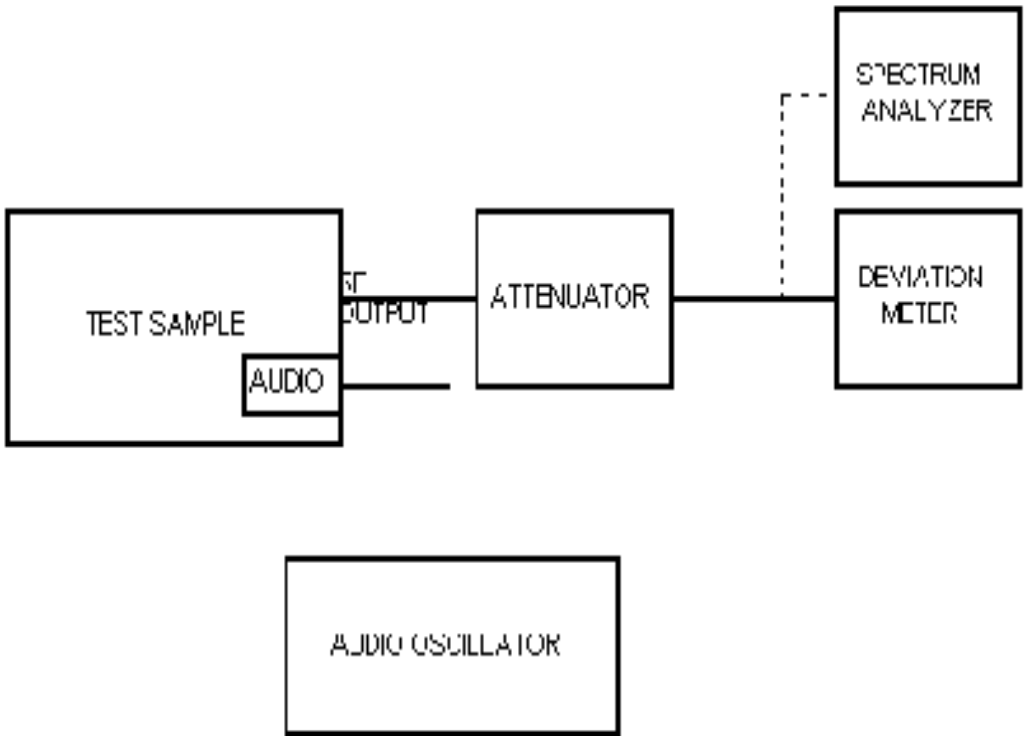
Occupied Bandwidth

OCCUPIED BANDWIDTH (PARA.2.1049)

A. Measurement Procedure:

An audio signal was directly coupled to the audio input of the test sample. The RF output was monitored using a deviation meter. The audio input level was increased to produce a 50% deviation +16dB. The RF output was then loosely coupled through external attenuators to a spectrum analyzer. The occupied bandwidth of the RF carrier, modulated at 50% deviation +16dB, was then measured. The above procedure was performed with the audio input frequencies of 1000, 2500, and 15000 Hz. The modulated signal must be within the template as specified by the applicable paragraph in Part 74. The above procedure was then repeated with the Audio Input acoustically coupled to the microphone at a level of 100dBspl.

Setup of the test is shown below:



B. Test Results:

The results for the above test are submitted as a separate attachment named occbw.pdf.

Para. 2.1053

Field Strength of Spurious Radiation

FIELD STRENGTH OF SPURIOUS RADIATION (PARA 2.1053)

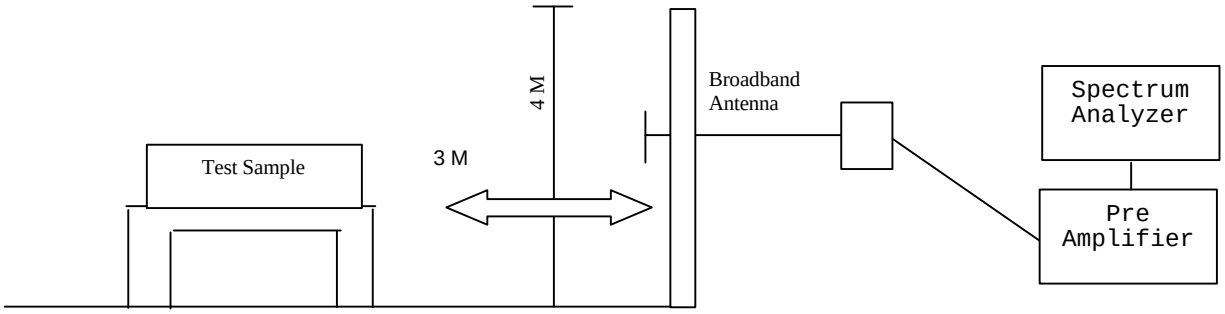
A. Measurement Procedure:

The test sample was then placed on an 80cm high wooden test stand, which was located three meters from the test antenna on an FCC listed test site. The frequency range scanned was from the lowest frequency generated by the test sample to its tenth harmonic. In order to maximize the level of each emission observed from the test sample, the broadband antenna was tuned to the frequency of each emission and the test sample was rotated 360 degrees. To further maximize the each emission observed, the test antenna was both horizontally and vertically polarized, and then was raised and lowered from one to four meters from the ground plane. The limits for all of the spurious emissions was calculated utilizing the measured output power and the following equation:

Limit <dBμV/M> = 20 log [{(49.2 x P_T) ^{½} /3} x 10^6] - (43 + 10 log P_T)

The above procedure was performed at the lower, middle and upper frequencies of the device's range.

Setup of the test is shown below:



B. Test Results:

The results for the above test are submitted as a separate attachment named spurious case.doc.

Paragraph 2.1055

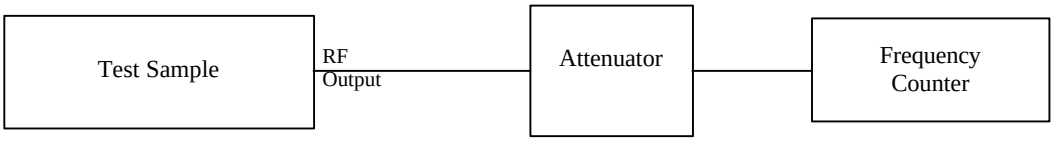
Frequency Stability

FREQUENCY STABILITY MEASUREMENTS

A. Measurement Procedure (Frequency vs. Voltage):

The RF output of the test sample was coupled to a frequency counter through external attenuation. Using a Variable power supply and voltmeter, the input voltage was varied. Measurements were taken with the device being supplied with 85, 100, and 115 percent of its rated input voltage and set to transmit the unmodulated carrier frequency.

Setup of the test is shown below:



B. Test Results:

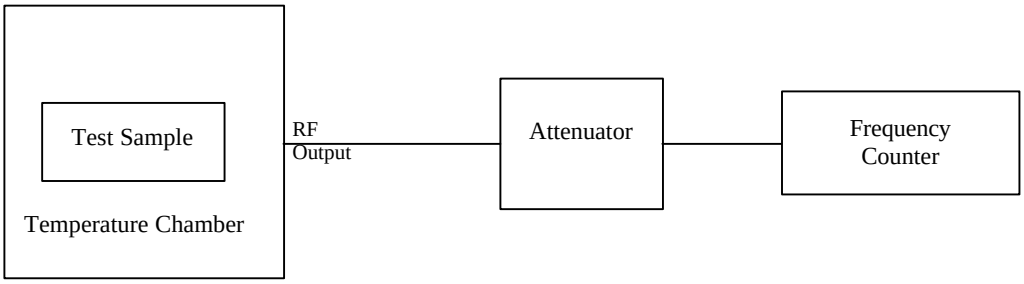
The results for the above test are submitted as a separate attachment named freq voltage.pdf.

FREQUENCY STABILITY MEASUREMENTS (PARA 2.995)

A. Measurement Procedure (Frequency vs. Temperature)

The RF output of the test sample was coupled to a frequency counter through external attenuators. With the counter connected, the test sample was activated and placed into a temperature chamber. The temperature was then programmed to start at -30 degrees Celsius and reach +50 degrees Celsius in 10 degrees increments. Each increment was held for 30 minutes in order to let the test sample stabilize at that temperature.

Setup of the test is shown below:



B. Test Results:

The results for the above test are submitted as a separate attachment named freq temp.pdf.

EQUIPMENT LISTS

Effective Radiated Power

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	10/15/2000	10/15/2003
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	08/03/2000	02/03/2001
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	08/02/2000	02/02/2001
451C	Tuned Dipole Antenna	Empire Devices	400 - 1000 MHz	DM-105-T3	08/08/2000	08/08/2001
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	06/08/2000	06/08/2001
574	Signal Generator	Marconi Instru.	9 kHz - 2.4 GHz	2024	05/01/2000	05/01/2001

FCC 74.861(e)(3) Frequency Response and Modulation Characteristics

EN	Type	Manufacturer	Description.	Model No.	Cal Date	Due Date
091	Shielded Enclosure	Retlif	10 kHz - 1 GHz	Room 6	07/14/1999	07/14/2000
159	Frequency Counter	Leader	10 Hz - 1 GHz	LDC-825	09/15/1999	09/15/2000
419	Modulation Meter	Boonton Electronics	.01 - 1.2 GHz	82AD	05/03/2000	05/03/2001
488	HP Test Oscilllator	Hewlett Packard	10 Hz - 10 MHz	654A	05/02/2000	05/02/2001

Frequency Stability versus Input Voltage (85% to 115%)

EN	Type	Manufacturer	Description.	Model No.	Cal Date	Due Date
091	Shielded Enclosure	Retlif	10 kHz - 1 GHz	Room 6	07/14/1999	07/14/2000
159	Frequency Counter	Leader	10 Hz - 1 GHz	LDC-825	09/15/1999	09/15/2000
520F	Digital Multimeter	Wavetek	N/A	DM25XT	01/06/2000	07/06/2000
696	DC Power Supply	BK Precision	30V/3A	1730	08/20/1999	08/20/2000

Frequency Stability versus Temperature (-30 degrees C. to 50 degrees C.)

EN	Type	Manufacturer	Description.	Model No.	Cal Date	Due Date
159	Frequency Counter	Leader	10 Hz - 1 GHz	LDC-825	09/15/1999	09/15/2000
520F	Digital Multimeter	Wavetek	N/A	DM25XT	01/06/2000	07/06/2000
612	Temperature Chamber	Thermotron Corp.	N/A	SE-1000L	01/18/2000	01/18/2001
696	DC Power Supply	BK Precision	30V/3A	1730	08/20/1999	08/20/2000

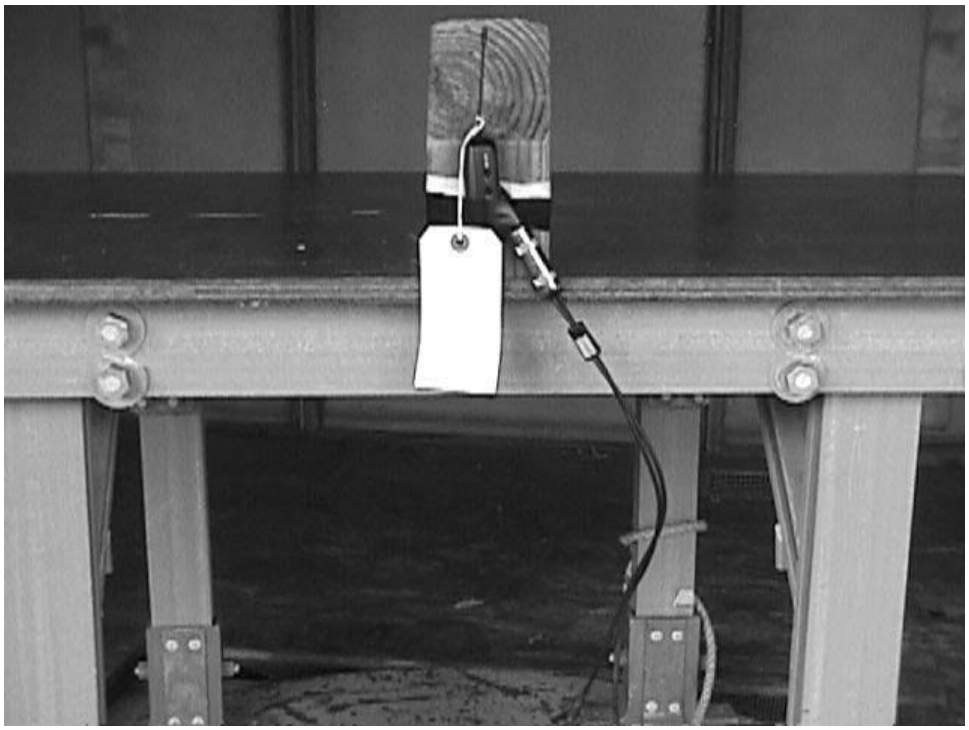
FCC 74.861(e)(5) Occupied Bandwidth

EN	Type	Manufacturer	Description.	Model No.	Cal Date	Due Date
091	Shielded Enclosure	Retlif	10 kHz - 1 GHz	Room 6	07/14/1999	07/14/2000
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/08/2000	03/08/2001
488	HP Test Oscilllator	Hewlett Packard	10 Hz - 10 MHz	654A	05/02/2000	05/02/2001
544	EMC Analyzer	Hewlett Packard	9.0 kHz - 1.8 GHz	8591EM	08/25/1999	08/25/2000

FCC2.1053 Spurious Radiated Emissions, 30MHz-9GHz

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	10/15/2000	10/15/2003
128C	Double Ridge Guide	Eaton Corporation	1 GHz - 18 GHz	96001	09/18/2000	09/18/2001
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	06/13/2000	06/13/2001
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	08/03/2000	02/03/2001
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/08/2000	03/08/2001
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	08/02/2000	02/02/2001
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	06/13/2000	06/13/2001
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	06/08/2000	06/08/2001
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	06/16/1999	06/16/2001
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	01/17/2000	01/17/2001

TEST SETUP PHOTOGRAPHS



AF1/AG1 Explanation of Spurious Limitation

1	Not use lower frequency than the transmission frequency 800MHz - Direct Oscillation.	Utilizing SAW Resor
2	Emitter coupling which has less spurious is used for between oscillation stage and buffer.	VCO etc. process.
3	Ouput side of the final stage is tuning type which has proper matching. It limits higher harmonic factor.	
4	Low pass filter located at the final stage eliminates higher harmonic factor.	Pai type 2 stages.

ıator.

Test Method:	Spurious Case Radiated Emissions, 30 MHz to 9 GHz, Paragraph 2.1053		
Customer:	Samson Technologies	**Job No.**	R-8512-5
Test Sample:	UHF Wireless Transmitter		
Model No.:	AF1	**FCC ID:**	CCRAF1M
Operating Mode	Continuously transmitting at 803.7 MHz		
Test Specification	FCC Part 2, Paragraph 2.1053, Field Strength of Spurious Radiation		
Technician:	Peter Lananna	**Date:**	December 13, 2000

Notes: Test Distance: D=3 M; Limit in dBuV= 20 log{[(49.2 x P)$^{1/2}$ /D] x 10^{6}} - (43+10 log P); P=Power in Watts
Detector: Peak

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuv	dB	dBuv/m	uv/m	uv/m
30.00							16,596
1607.5	V/1.3	270	62.5	0.9	63.4	1479.1	
2411.2	V/1.3	158	61.1	3.8	64.9	1757.9	
3215.1	V/1.0	135	54.2	1.7	55.9	623.7	
4018.5	V/1.0	180	30.5	10.2	40.7	108.4*	
4822.4	V/1.0	180	28.3	11.9	40.2	102.3*	
5626.0	V/1.0	180	28.6	5.8	34.4	52.5*	
V							V
8037.00							16,596

The EUT was scanned from 30 MHz to 9 GHz
The emissions observed from the EUT do not exceed the specified limits.
All emissions not recorded were more than 20dB below the specified limit.
* Denotes minimum system sensitivity.

Retlif Testing Laboratories

Retlif Job Number R-8512-5

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	**POWER OUTPUT, EFFECTIVE RADIATED POWER METHOD, PARAGRAPH 2.1046**		
CUSTOMER:	Samson Technologies	JOB No.:	R-8512-5
TEST SAMPLE:	800MHz Wireless Transmitter FCC ID:CCRAF1M		
MODEL No.:	AF1	SERIAL No.:	N/A
TEST SPECIFICATION:	FCC PART 2	PARAGRAPH:	2.1046
OPERATING MODE:	CONTINUOUSLY TRANSMITTING A CW SIGNAL AT CENTER FREQUENCY/CHANNEL SHOWN BELOW.		
TECHNICIAN:	Peter Lananna	DATE:	December 13, 2000
NOTES:			

CENTER FREQUENCY	CHANNEL	Antenna Orientation	METER READING			Signal Gen. Output Level	CONVERTED READING	LIMIT
MHz			dBuV			dBm	mWatts	mWatts
								250
								|
803.7	U4	1.3	73.8			1.9	1.5	|
								|
								V
								250

The EUT was placed on a tabletop, and the radiated output level was measured with a dipole antenna. After the level was maximized, the EUT was replaced with another dipole and a signal generator. The level of the generator was raised until it matched the level recorded from the EUT and this was considered to be the output power.

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	**Frequency Stability (-30°C to +50°C)**		
CUSTOMER:	Samson Technologies	JOB No.:	R-8512-5
TEST SAMPLE:	UHF Wireless Transmitter		
MODEL No.:	AF1	SERIAL No.:	N/A FCC ID: CCRAF1M
TEST SPECIFICATION:	FCC Part 74, Subpart H;Experimental Radio, Auxiliary Special Broadcast, & other Program Distributional Services, Subpart H; Low Power Auxiliary Stations.	PARAGRAPH:	74.861 (e) (4)
OPERATING MODE:	Transmitting on channel U4 (803.75 MHz)		
TECHNICIAN:	N. Dragotta	DATE:	April 27, 2000
NOTES:	Tolerance: +/- 0.005% (+/- .040188 MHz)		

Channel	Channel Frequency	Act. Transmit Frequency		Temperature	Lower Limit	Meter Reading	Upper Limit	Pass / Fail
	MHz	MHz		Degrees C.	MHz	MHz	MHz	
04	803.75	803.7737		-30	803.79	803.7211	803.71	Pass
"	"	"		-20	"	803.7394	"	Pass
"	"	"		-10	"	803.7563	"	Pass
"	"	"		0	"	803.7679	"	Pass
"	"	"		10	"	803.7741	"	Pass
"	"	"		20	"	803.7736	"	Pass
"	"	"		room temp	"	803.7737	"	Pass
"	"	"		30	"	803.7673	"	Pass
V	V	V		40	V	803.7546	V	Pass
04	803.75	803.7737		50	803.79	803.7362	803.71	Pass

The test sample performed within the limits specified by the above listed specification.

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	**Frequency Stability (DC Input Power 85% TO 115%)**
CUSTOMER:	Samson Technologies — JOB No.: R-8512-5
TEST SAMPLE:	UHF Wireless Transmitter
MODEL No.:	AF1 — SERIAL No.: N/A — FCC ID: CCRAF1
TEST SPECIFICATION:	FCC Part 74, Subpart H;Experimental Radio, Auxiliary Special Broadcast, & other Program Distributional Services, Subpart H; Low Power Auxiliary Stations. — PARAGRAPH: 74.861 (e) (4)
OPERATING MODE:	Transmitting on channel U4 (803.75 MHz)
TECHNICIAN:	N. Dragotta — DATE: April 27, 2000
NOTES:	Tolerance: +/- 0.005% (+/- .040188 MHz) Temperature: 23° C. Humidity: 29%

Channel	TRANSMIT FREQUENCY	INPUT VOLTAGE	INPUT VOLTAGE		LOWER LIMIT	METER READING	UPPER LIMIT	Pass / Fail
	MHz	%	VDC		MHz	MHz	MHz	
04	803.75	85	1.28		803.79	803.7735	803.71	Pass
04	803.75	100	1.50		803.79	803.7737	803.71	Pass
04	803.75	115	1.73		803.79	803.7737	803.71	Pass
04	803.75	Battery End Point	**1.15		803.79	803.7735	803.71	Pass

The test sample performed within the limits specified by the above listed specification.

** = At this input voltage, the low battery LED on the unit illuminated.

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	**Audio Frequency Response (100 Hz TO 20 KHz)**		
CUSTOMER:	Samson Technologies	JOB No.:	R-8512-5
TEST SAMPLE:	UHF Wireless Transmitter		
MODEL No.:	AF1	SERIAL No.:	N/A FCC ID: CCRAF1M
TEST SPECIFICATION:	FCC Part 74, Subpart H;Experimental Radio, Auxiliary Special Broadcast, & other Program Distributional Services, Subpart H; Low Power Auxiliary Stations.	PARAGRAPH:	74.861(e)(3)
OPERATING MODE:	Transmitting on channel U4 (803.75 MHz)		
TECHNICIAN:	N. Dragotta	DATE:	May 5, 2000
NOTES:	**Modulation signal direct input of a 1 kHz signal at a level of -10 dBm. **Maximum Allowable Audio Frequency Response = 75 kHz Temperature: 23° C. Humidity:39%		

Audio Input Frequency	Input Level	FM Deviation						
kHz	dB	kHz						
0.100	-10	20.3						
0.300	-10	20.0						
0.500	-10	26.5						
1.000	-10	29.0						
1.500	-10	29.4						
2.000	-10	29.4						
2.500	-10	29.4						
5.000	-10	29.3						
10.000	-10	30.9						
15.000	-10	16.9						
20.000	-10	12.9						

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	**Modulation Characteristics (100 Hz TO 15 KHz) Para 2.1047**
CUSTOMER:	Samson Technologies — JOB No.: R-8512-5
TEST SAMPLE:	UHF Wireless Transmitter
MODEL No.:	AF1 — SERIAL No.: N/A — FCC ID: CCRAF1M
TEST SPECIFICATION:	FCC Part 74, Subpart H;Experimental Radio, Auxiliary Special Broadcast, & other Program Distributional Services, Subpart H; Low Power Auxiliary Stations. — PARAGRAPH: 74.861(e)(3)
OPERATING MODE:	Transmitting on channel U4 (803.75 MHz)
TECHNICIAN:	N. Dragotta — DATE: May 5, 2000
NOTES:	Temperature: 23° C. Humidity: 39%

INPUT LEVEL	Deviation @ 100 Hz AF	Deviation @ 300 Hz AF	Deviation @ 500 Hz AF	Deviation @ 1 kHz AF	Deviation @ 1.5 kHz AF	Deviation @ 2 kHz AF		MAXIMUM DEVIATION
dbm	kHz	kHz	kHz	kHz	kHz	kHz		kHz
-50	9.6	10.2	10.6	11.4	12.4	13.7		75.0
-40	16.4	17.3	18.0	19.1	20.4	21.4		75.0
-30	22.0	21.7	21.7	21.9	23.0	26.6		75.0
-20	21.5	20.5	21.0	28.1	28.8	29.1		75.0
-10	20.3	20.0	26.5	29.0	29.4	29.4		75.0
0	20.3	23.8	28.8	29.5	29.6	29.7		75.0
+10	21.6	22.7	29.6	29.8	29.8	29.7		75.0

The test sample performed within the limits specified by the above listed specification.

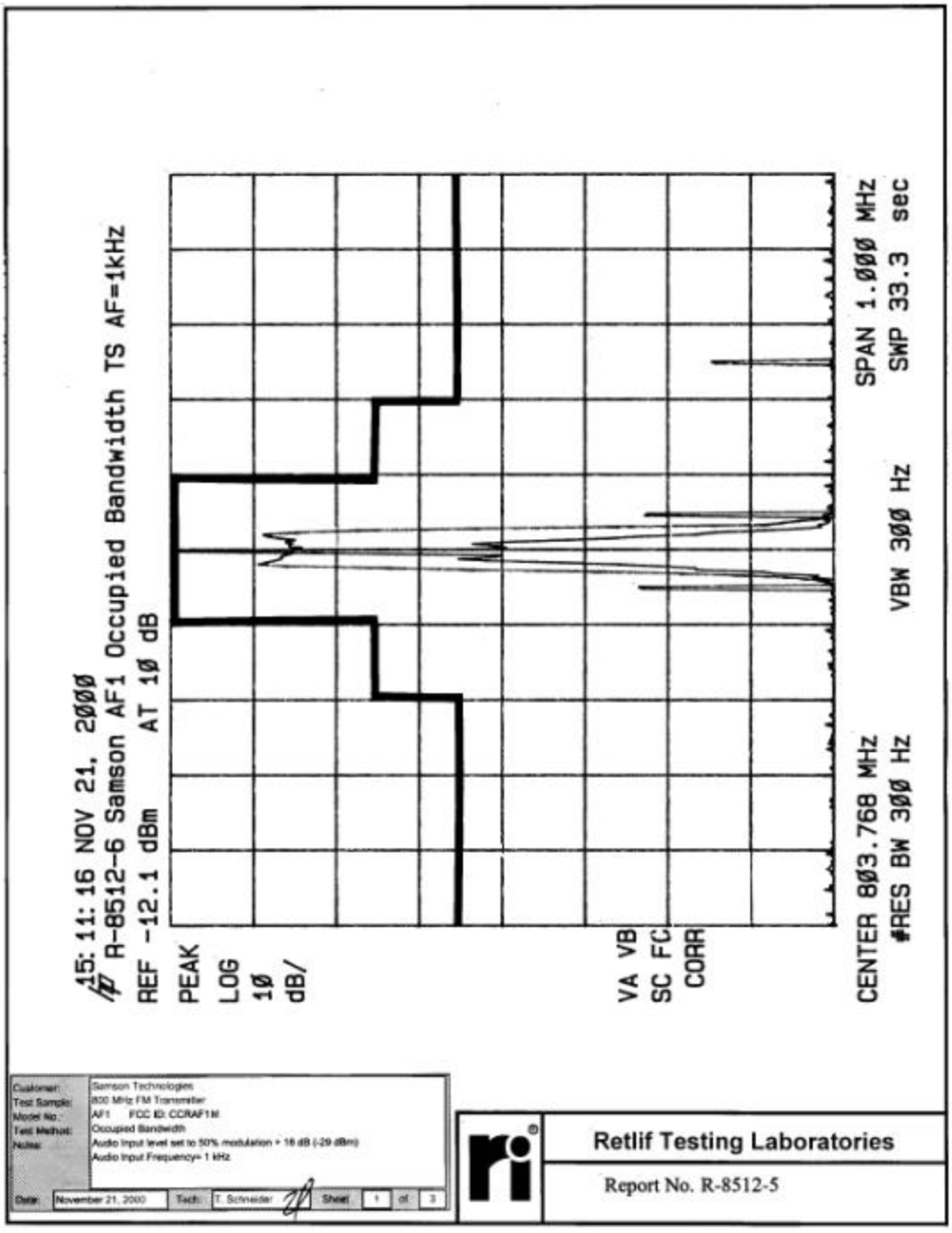
RETLIF TESTING LABORATORIES

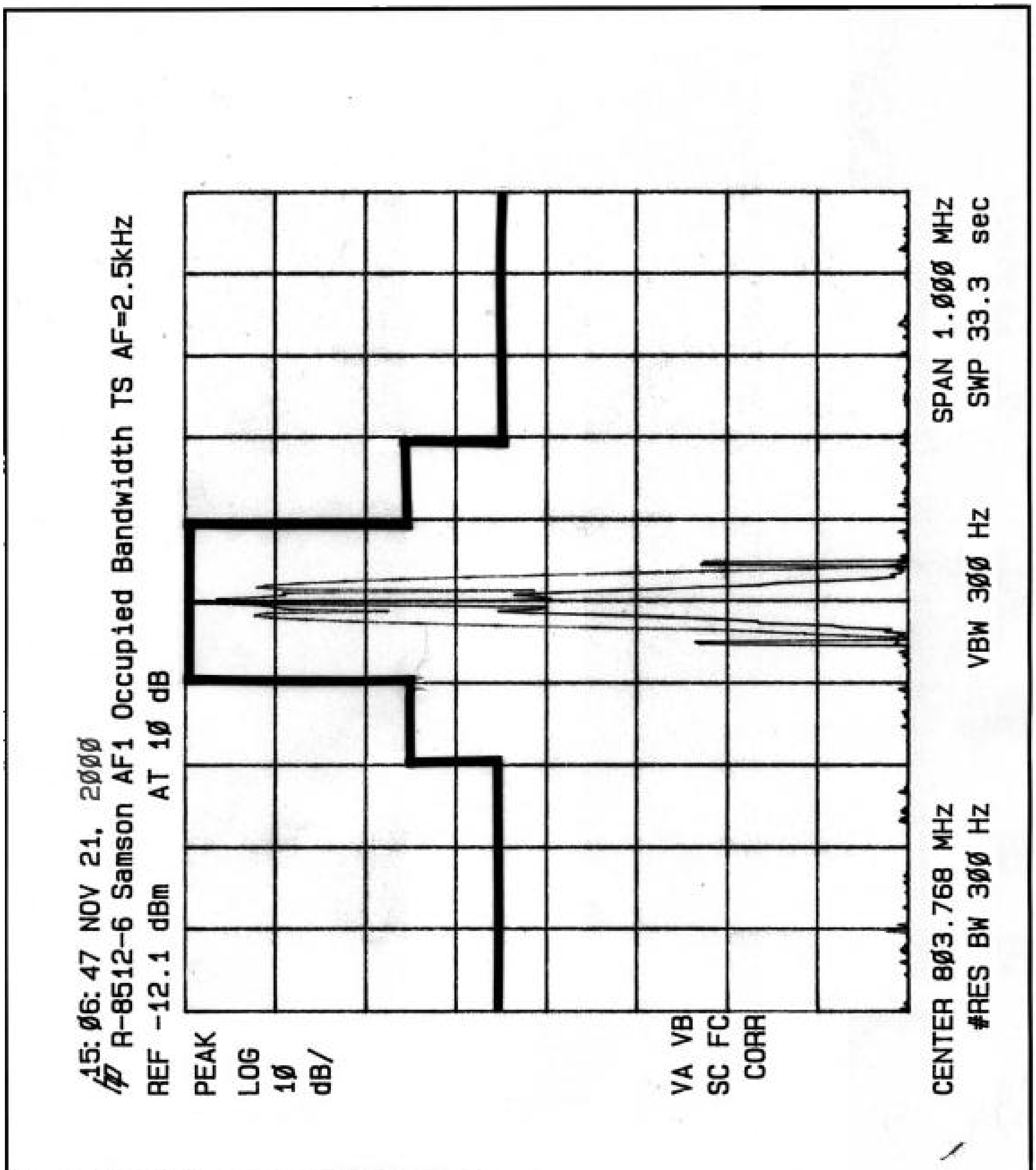
TABULAR DATA SHEET

TEST METHOD:	**Modulation Characteristics (100 Hz TO 15 KHz) Para 2.1047**		
CUSTOMER:	Samson Technologies	JOB No.:	R-8512-5
TEST SAMPLE:	UHF Wireless Transmitter		
MODEL No.:	AF1	SERIAL No.:	N/A FCC ID: CCRAF1M
TEST SPECIFICATION:	FCC Part 74, Subpart H;Experimental Radio, Auxiliary Special Broadcast, & other Program Distributional Services, Subpart H; Low Power Auxiliary Stations.	PARAGRAPH:	74.861(e)(3)
OPERATING MODE:	Transmitting on channel U4 (803.75 MHz)		
TECHNICIAN:	N. Dragotta	DATE:	May 5, 2000
NOTES:	Temperature: 23° C. Humidity: 39%		

INPUT LEVEL	Deviation @ 2.5 kHz AF	Deviation @ 5 kHz AF	Deviation @ 10 kHz AF	Deviation @ 15 kHz AF	Deviation @ 20 kHz AF			MAXIMUM DEVIATION
dbm	kHz	kHz	kHz	kHz	kHz			kHz
-50	15.3	23.5	30.9	31.8	24.8			75.0
-40	22.3	27.6	31.4	32.5	25.3			75.0
-30	27.8	27.8	31.6	32.8	25.4			75.0
-20	29.2	29.9	31.6	19.5	14.8			75.0
-10	29.4	29.3	30.9	16.9	12.9			75.0
0	29.6	29.2	30.0	16.6	12.8			75.0
+10	29.6	29.2	29.8	16.5	12.7			75.0

The test sample performed within the limits specified by the above listed specification.


15: 11: 16 NOV 21, 2000
R-8512-6 Samson AF1 Occupied Bandwidth TS AF=1kHz
REF -12.1 dBm AT 10 dB
PEAK
LOG
10
dB/
VA VB
SC FC
CORR
CENTER 803.768 MHz
#RES BW 300 Hz
VBW 300 Hz
SPAN 1.000 MHz
SWP 33.3 sec
Customer: Samson Technologies
Test Sample: 800 MHz FM Transmitter
Model No.: AF1 FCC ID: CCRAF1M
Test Method: Occupied Bandwidth
Notes: Audio Input level set to 50% modulation = 16 dB (-29 dBm)
Audio Input Frequency= 1 kHz
Date: November 21, 2000
Tech: T. Schneider
Sheet 1 of 3
Retlif Testing Laboratories
Report No. R-8512-5



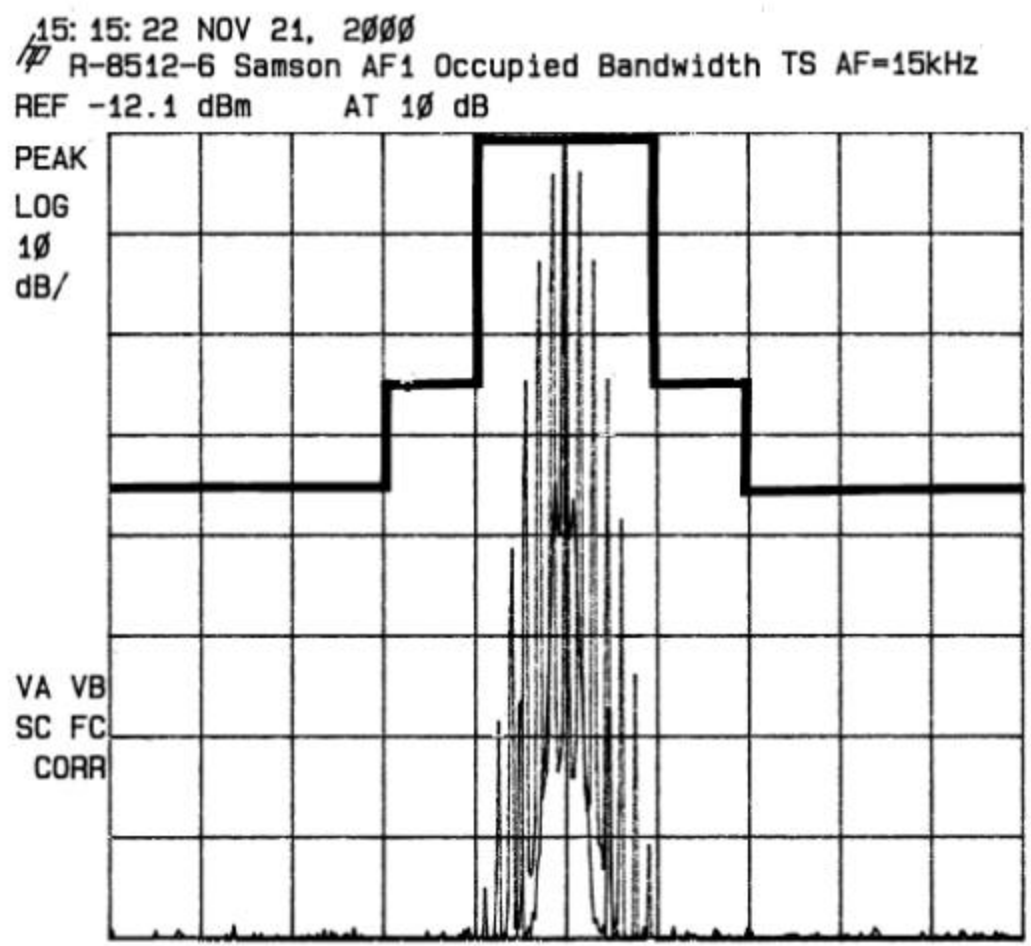
Customer:	Samson Technologies
Test Sample:	800 MHz FM Transmitter
Model No.:	AF1 FCC ID: CCRAF1M
Test Method:	Occupied Bandwidth
Notes:	Audio Input level set to 50% modulation + 16 dB (-34 dBm) Audio Input Frequency= 2.5 kHz

Date: November 21, 2000 Tech: T. Schneider Sheet 2 of 3

Retlif Testing Laboratories

Report No. R-8512-5

Customer:	Samson Technologies
Test Sample:	900 MHz FM Transmitter
Model No:	AF1 FCC ID: CCRAF1M
Test Method:	Occupied Bandwidth
Notes:	Audio input level set to 50% modulation +16 dB (-61 dBm)
	Audio input Frequency= 15 kHz
Date:	November 21, 2000
Tech:	T. Schneider
Sheet	3 of 3



Retlif Testing Laboratories

Report No. R-8512-5